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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/931,763	08/20/2001	Masanori Nakamura	107318-00004	6959

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EXAMINER

GOFF II, JOHN L

ART UNIT PAPER NUMBER

1733

DATE MAILED: 08/25/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/931,763

Applicant(s)

NAKAMURA ET AL.

Examiner

John L. Goff

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 June 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 13-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 13-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☒ Certified copies of the priority documents have been received in Application No. 09/355,946.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This action is in response to Amendment C filed on 6/13/03. In view of applicants arguments the previous rejection of claim 15 is withdrawn, and a new rejection over Gash in view of the admitted prior art and Barham et al. is set for below.

Claim Rejections - 35 USC § 102/103

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

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5. Claim 13 is rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Gash (U.S. Patent 4,355,076) in view of the admitted prior art (Specification page 7).

Gash is directed to a method for dry laminating at least two plastic films. Gash teaches the method comprises contacting at least two plastic films wherein each film may have a different melting point, heating the films at a temperature in the range from ambient up to the melting temperature of the film having the lowest melting point to form a low peel strength composite, and subsequently subjecting the composite to heat at an elevated temperature in the same range in order to form a high peel strength laminate (Column 1, lines 6-16). Gash teaches performing the heating using heated rolls, i.e. laminating under heat and pressure (Column 2, lines 39-41, 46-50, and 55-68). Gash further teaches the films may comprise polyolefin material and in particular oriented polyolefin material (Column 2, lines 25-27 and Column 3, lines 1-12). Gash is silent as to specifically disclosing that oriented polyolefin materials (films) have an average coefficient of linear expansion not exceeding 5×10^{-5} ($^{\circ}\text{C}$) in the 20-80 $^{\circ}\text{C}$ temperature range. However, it is noted the oriented polyolefin materials employed in Gash are the same as those claimed by applicant, and they are consistent and in agreement with applicants specification (Page 9, lines 7-11) such that it appears an average coefficient of linear expansion not exceeding 5×10^{-5} ($^{\circ}\text{C}$) in the 20-80 $^{\circ}\text{C}$ would be intrinsic to the oriented polyolefin materials taught by Gash. Furthermore, one of ordinary skill in the art at the time the invention was made would have readily expected the oriented polyolefin films taught by Gash to have an average coefficient of linear expansion less than or equal to 5×10^{-5} ($^{\circ}\text{C}$) in the 20-80 $^{\circ}\text{C}$ temperature range in view

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of the teaching by the admitted prior art that it is unoriented polyolefin films that have average coefficients of linear expansion exceeding 5×10^{-5} ($^{\circ}\text{C}$) in the 20-80 $^{\circ}\text{C}$ temperature range.

The admitted prior art teaches "An average linear expansion coefficient of polyolefin in an unoriented state is generally greater than 5×10^{-5} ($^{\circ}\text{C}$) in the 20-80 $^{\circ}\text{C}$ range. Due to the inclusion of the oriented polyolefin material, the polyolefin article of the present invention exhibits a value of not exceeding 5×10^{-5} ($^{\circ}\text{C}$) for average coefficient of linear expansion in the in the 20-80 $^{\circ}\text{C}$ range, as specified above. In other words, the oriented polyolefin material is included in the polyolefin article so that its average coefficient of linear expansion in the 20-80 $^{\circ}\text{C}$ range is maintained at a value of not exceeding 5×10^{-5} ($^{\circ}\text{C}$)" (Emphasis added) (Specification page 7, lines 13-23).

Claim Rejections - 35 USC § 103

6. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gash and the admitted prior art as applied in paragraph 5 above, and further in view of Ikenaga et al. (U.S. Patent 4,717,624).

Gash and the admitted prior art as applied above teach all of the limitations in claim 14 except for a teaching on using oriented films that comprise a plurality of stacked sheets wherein oriented sheets having minus values for the average coefficient of linear expansion are covered by oriented or unoriented sheets having plus values for the average coefficient of linear expansion. One of ordinary skill in the art at the time the invention was made would have readily appreciated using as the oriented films taught by Gash oriented films comprising a plurality of stacked sheets wherein an oriented sheet having minus values for the average

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coefficient of linear expansion is covered by an oriented or unoriented sheet having a plus value for the average coefficient of linear expansion as suggested by Ikenaga et al. in order to form laminated composites with improved dimensional stability.

Ikenaga et al. are directed to composites (including polyolefin composites) having improved dimensional stability comprising a plurality of stacked sheets wherein oriented sheets having minus values for the average coefficient of linear expansion are covered by oriented or unoriented sheets having plus values for the average coefficient of linear expansion (Column 1, lines 20-29 and 43-68 and Column 2, lines 12-26 and 30-43 and Column 11, lines 38-30 and Column 12, lines 41-53).

7. Claims 15, 16, 19, 21, 22 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gash and the admitted prior art as applied in paragraph 5 above, and further in view of Barham et al. (U.S. Patent 4,311,660).

Gash and the admitted prior art as applied above teach all of the limitations in claims 15, 16, 19, 21, 22, and 26 except for a teaching on heat-treating the polyolefin films during their preparation. It would have been obvious to one of ordinary skill in the art at the time the invention was made to heat-treat the oriented polyolefin films taught by Gash as modified by the admitted prior art as it was well known in the art to heat-treat oriented polyolefin films during their preparation to provide them with increased dimensional stability as shown for example by Barham et al.

Barham et al. are directed heat-treating oriented polyolefin films to give the films improved dimensional stability. Barham et al. teach the polyolefin films pass through a heat-treatment station, for example heated rollers, wherein the surfaces of the films are heated up to a

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temperature exceeding the normal crystalline melting temperature of the polyolefin followed by immediate cooling (Column 1, lines 15-21 and Column 3, lines 58-68 and Column 5, lines 33-37 and 49-54).

Regarding claim 16, one of ordinary skill in the art at the time the invention was made would readily expect the oriented polyolefin films taught by Gash as modified by the admitted prior art and Barham et al. to have the same melting point ranges following the heat-treatment as those currently claimed as the oriented polyolefin films taught by Gash as modified by the admitted prior art and Barham et al. are the same as those taught by applicant and the oriented polyolefin films undergo the same heat treatment as that taught by applicant.

8. Claims 17, 18, 20, 23, and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gash, the admitted prior art, and Ikenaga et al. as applied in paragraph 6 above, and further in view of Barham et al. (U.S. Patent 4,311,660).

Gash, the admitted prior art, and Ikenaga et al. as applied above teach all of the limitations in claims 17, 18, 20, 23, and 24 except for a teaching on heat-treating the polyolefin films during their preparation. It would have been obvious to one of ordinary skill in the art at the time the invention was made to heat-treat the oriented polyolefin films taught by Gash as modified by the admitted prior art and Ikenaga et al. as it was well known in the art to heat-treat oriented polyolefin films during their preparation to provide them with increased dimensional stability as shown for example by Barham et al.

Barham et al. are directed heat-treating oriented polyolefin films to give the films improved dimensional stability. Barham et al. teach the polyolefin films pass through a heat-treatment station, for example heated rollers, wherein the surfaces of the films are heated up to a

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temperature exceeding the normal crystalline melting temperature of the polyolefin followed by immediate cooling (Column 1, lines 15-21 and Column 3, lines 58-68 and Column 5, lines 33-37 and 49-54).

Regarding claim 16, one of ordinary skill in the art at the time the invention was made would readily expect the oriented polyolefin films taught by Gash as modified by the admitted prior art, Ikenaga et al., and Barham et al. to have the same melting point ranges following the heat-treatment as those currently claimed as the oriented polyolefin films taught by Gash as modified by the admitted prior art, Ikenaga et al., and Barham et al. are the same as those taught by applicant and the oriented polyolefin films undergo the same heat treatment as that taught by applicant.

9. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gash and the admitted prior art as applied in paragraph 5 above, and further in view of Bruno (U.S. Patent 3,361,607).

Gash and the admitted prior art as applied above teach all of the limitations in claim 25 except for a teaching on the temperature at which the polyolefin films are oriented. However, it is well known in the art that the orientation temperature is a function of the amount of orientation desired, as shown for example by Bruno, such that it would have been well within the ordinary skill of one in the art at the time the invention was made to determine the required orientation temperature depending upon the amount of orientation desired as doing so would require nothing more than ordinary skill and routine experimentation. Furthermore, it is well known in the art to orient polyolefin materials over the claimed temperature range as shown for example by Bruno such that it would have been obvious to one of ordinary skill in the art at the time the invention

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was made to orient the polyolefin materials taught by Gash as modified by the admitted prior art within a temperature range of 85-120 °C as only the expected results would be achieved.

Bruno is directed to bonding oriented polyolefin films that have been subjected to a heat-treatment. Bruno teaches the polyolefin films are oriented within a temperature range of 95-115°C. However, Bruno further teaches that the amount of orientation, i.e. stretch, and temperature at which the orientation is carried out are interrelated (Column 3, lines 62-70).

Response to Arguments

10. Applicant's arguments with respect to claims 13-26 have been considered but are moot in view of the new ground(s) of rejection. Applicant argues "While the present application does state that the average coefficient of linear expansion of polyolefin in an unoriented state is generally greater than 5×10^{-5} (/°C) in the 20-80 °C range, it does not necessarily follow that all oriented polyolefin materials have a value lower than 5×10^{-5} (/°C) in the 20-80 °C range. This can be seen, for example, in comparative examples 4-12 of U.S. Patent No. 4,717,624 ("Ikenaga et al."), wherein each of the oriented layers possess average coefficients of linear expansion exceeding 5×10^{-5} (/°C) in the 20-80 °C range". It is noted the admitted prior art teaches "An average linear expansion coefficient of polyolefin in an unoriented state is generally greater than 5×10^{-5} (/°C) in the 20-80 °C range. Due to the inclusion of the oriented polyolefin material, the polyolefin article of the present invention exhibits a value of not exceeding 5×10^{-5} (/°C) for average coefficient of linear expansion in the in the 20-80 °C range, as specified above. In other words, the oriented polyolefin material is included in the polyolefin article so that its average coefficient of linear expansion in the 20-80 °C range is maintained at a value of not exceeding

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5×10^{-5} ($^{\circ}\text{C}$)” (Emphasis added) (Specification page 7, lines 13-23). Thus, it appears from the specification that it is solely the addition of oriented polyolefin material that creates polyolefin articles exhibiting a value of not exceeding 5×10^{-5} ($^{\circ}\text{C}$) for the average coefficient of linear expansion in the in the 20-80 $^{\circ}\text{C}$ range and it follows that oriented polyolefin materials have values not exceeding 5×10^{-5} ($^{\circ}\text{C}$) for the average coefficient of linear expansion in the in the 20-80 $^{\circ}\text{C}$ range. Furthermore, as to Ikenaga et al. the examples of average coefficient of linear expansion referred to, i.e. examples 4-12 with results shown in Columns 17 and 18 (Table 2), are for polyolefin articles comprising oriented layers in addition to other polymer layers such that Ikenaga et al. does not teach that oriented layers alone possess average coefficients of linear expansion exceeding 5×10^{-5} ($^{\circ}\text{C}$) in the 20-80 $^{\circ}\text{C}$ range. However, Ikenaga et al. does teach that the oriented polyolefin layers alone in examples 1-18 posses average coefficients of linear expansion not exceeding 5×10^{-5} ($^{\circ}\text{C}$) in the 20-80 $^{\circ}\text{C}$ range as shown in Table 1 (See Column 14, lines 1-2, 21-23, and 27-35 and Table 1 in Column 16).

Applicant further argues Gash teaches a preferred temperature range of 60 - 180 $^{\circ}\text{C}$ and as such because temperatures greater then 120 $^{\circ}\text{C}$ are employed Gash does not employ high orientation ratios. It is noted that while Gash teaches temperatures above 120 $^{\circ}\text{C}$ Gash also teaches temperatures below 120 $^{\circ}\text{C}$ such that Gash does not teach away from high orientation ratios.

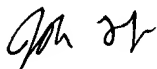
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Conclusion

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **John L. Goff** whose telephone number is **703-305-7481**. The examiner can normally be reached on M-Th (8 - 5) and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Ball can be reached on 703-308-2058. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.



John L. Goff
August 19, 2003



Michael W. Ball
Supervisory Patent Examiner
Technology Center 1700